



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,639	03/25/2004	Joseph M. Ferencz	1927A1	7496
7590 PPG INDUSTRIES, INC. Intellectual Property Department One PPG Place Pittsburgh, PA 15272			EXAMINER COOLEY, CHARLES E	
			ART UNIT 1723	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE		
3 MONTHS	03/12/2007	PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

H2

Office Action Summary	Application No.	Applicant(s)	
	10/809,639	FERENCZ ET AL.	
	Examiner	Art Unit	
	Charles E. Cooley	1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 21 February 2007.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1 and 5-12 is/are pending in the application.
 4a) Of the above claim(s) 7-12 is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1,5 and 6 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) 1 and 5-12 are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 20 October 2006 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

FINAL OFFICE ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 21 FEB 2007 has been entered.

Election/Restriction Requirement

2. This application contains claims 7-12 drawn to an invention nonelected without traverse. A complete reply to this final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Drawings

3. The replacement drawing sheet was received on 20 OCT 2006 and is approved.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1723

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. **Claims 1 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizoguchi et al. (US 5,667,299) in view of Johnson et al. (US 4,344,710).**

Mizoguchi et al. (US 5,667,299) discloses in Figures 1-8 a single (col. 9, lines 29-33) or twin-screw extruder (Fig. 8) comprising one or more rotating screws 5; a plurality of adjacent segments 3a-3d surrounding the rotating screw(s), each of the segments including a cooling system 7a-7d for cooling material in the segment, and a heating system 4a-4d for heating material in the segment, wherein the cooling system and the heating system of each of the segments can be selectively, independently operated (col. 3, lines 8-18 and col. 7, lines 15-18), one of the segments having an inlet 6 for receiving base material into the extruder from a source of base material in flow

communication with the inlet 6 (col. 1, lines 41-43); one of the segments having an outlet (a die - col. 1, lines 41-44) for discharging material from the extruder; wherein each cooling system includes a cooling fluid inlet and outlet in each segment as seen in Figure 1. Mizoguchi et al. thus discloses all of the recited subject matter with the exception of the recited additive injector.

The patent to **Johnson et al. (US 4,344,710)** discloses an extruder 30 comprising one or more rotating screws; heating systems 34 surrounding the rotating screw(s) for heating material in the segment; an additive injector 24 for injecting additives into a section of the extruder at an injection position between the inlet 30 and the outlet 38; wherein the additive injector is in flow communication with a source of the additive in pressure vessel 100 and includes a flow regulator 118 between the pressure vessel and the injection position, a source of pressurization coupled to the pressure vessel for pressurizing the pressure vessel (col. 2, lines 3-5), and means for maintaining the pressure in the pressure vessel in the form of a pressure regulator 110 capable of controlling the pressure to any desired value in the injection line 106. It would have been obvious to one having ordinary skill in the art, at the time applicant's invention was made, to have provided the heated/cooled extruder of Mizoguchi et al. with an additive injector as taught by Johnson et al. '710 for the purposes of enabling the injecting of a plurality of diverse fluids from a source to an injection zone of the extruder and to control the amount of fluid injected (col. 1, line 62 - col. 2, line 2).

7. Claims 1 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizoguchi et al. (US 5,667,299) in view of Chang et al. (US 5,318,431).

Mizoguchi et al. (US 5,667,299) discloses in Figures 1-8 a single (col. 9, lines 29-33) or twin-screw extruder (Fig. 8) comprising one or more rotating screws 5; a plurality of adjacent segments 3a-3d surrounding the rotating screw(s), each of the segments including a cooling system 7a-7d for cooling material in the segment, and a heating system 4a-4d for heating material in the segment, wherein the cooling system and the heating system of each of the segments can be selectively, independently operated (col. 3, lines 8-18 and col. 7, lines 15-18), one of the segments having an inlet 6 for receiving base material into the extruder from a source of base material in flow communication with the inlet 6 (col. 1, lines 41-43); one of the segments having an outlet (a die - col. 1, lines 41-44) for discharging material from the extruder; wherein each cooling system includes a cooling fluid inlet and outlet in each segment as seen in Figure 1. Mizoguchi et al. thus discloses all of the recited subject matter with the exception of the recited additive injector.

The patent to Chang et al. (US 5,318,431) discloses an extruder 1 comprising one or more rotating screws; heating systems 17 surrounding the rotating screw(s) for heating material in the segment; one or more additive injectors 27 for injecting additives into a section of the extruder at an injection position between the inlet 13 and the outlet 19 (the injectors can be located at any desired position along the extruder as taught by col. 6, lines 16-32); wherein the additive injector 27 is in flow communication with a source of the additive in pressure vessel 53 and includes a flow regulator 43 between

the pressure vessel and the injection position, a source of pressurization 56 and/or 63 coupled to the pressure vessel for pressurizing the pressure vessel, and means for maintaining the pressure in the pressure vessel in the form of a pressure regulator 47, 57, and/or 61 capable of controlling the pressure to any desired value. It would have been obvious to one having ordinary skill in the art, at the time applicant's invention was made, to have provided the heated/cooled extruder of Mizoguchi et al. with an additive injector as taught by Chang et al. '431 for the purposes of enabling the injecting of a plurality of substances from a source to an injection zone of the extruder and to control the amount of fluid injected thereby altering the composition of the extruded product to a desired state and to control the melt temperature of the composition (col. 3, lines 23 - col. 4, line 22).

8. Claims 1, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizoguchi et al. (US 5,667,299) in view of Rizvi et al. (US 5,120,559).

Mizoguchi et al. (US 5,667,299) discloses in Figures 1-8 a single (col. 9, lines 29-33) or twin-screw extruder (Fig. 8) comprising one or more rotating screws 5; a plurality of adjacent segments 3a-3d surrounding the rotating screw(s), each of the segments including a cooling system 7a-7d for cooling material in the segment, and a heating system 4a-4d for heating material in the segment, wherein the cooling system and the heating system of each of the segments can be selectively, independently operated (col. 3, lines 8-18 and col. 7, lines 15-18), one of the segments having an inlet 6 for receiving base material into the extruder from a source of base material in flow

communication with the inlet 6 (col. 1, lines 41-43); one of the segments having an outlet (a die - col. 1, lines 41-44) for discharging material from the extruder; wherein each cooling system includes a cooling fluid inlet and outlet in each segment as seen in Figure 1. Mizoguchi et al. thus discloses all of the recited subject matter with the exception of the recited additive injector.

The patent to **Rizvi et al.** discloses an extruder 20 comprising one or more rotating screws 22; heating system 30 surrounding the rotating screw(s) for heating material in the segment; one or more additive injectors 32, 46 for injecting additives into a section of the extruder at an injection position between the inlet 18 and the outlet 90; wherein the additive injector is in flow communication with a source of the additive in pressure vessel 51 and includes a flow regulator 68 between the pressure vessel and the injection position, an inherent source of pressurization coupled to the pressure vessel 51 for pressurizing the pressure vessel since the vessel is pressurized, and means for maintaining the pressure in the pressure vessel in the form of a pressure regulator 70 capable of controlling the pressure to any desired value (col. 5, lines 32-39); and a pre-mix hopper 10, 14 and a mechanical feeder (the screw between 12 and 18) extending from an exit of the pre-mix hopper to the inlet 18 of the extruder 20. It would have been obvious to one having ordinary skill in the art, at the time applicant's invention was made, to have provided the heated/cooled extruder of Mizoguchi et al. with an additive injector and hopper with feeder as taught by Rizvi et al. for the purposes of enabling the injecting of a plurality of substances from a source to an injection zone of the extruder and to control the amount of fluid injected thereby altering

the characteristics of the extruded product to a desired state (such as texture, appearance, flavor, viscosity, pH, color), and to premix multiple materials before entering the extruder via the hopper and feeder (col. 1, lines 6-10 and lines 43-47; col. 7-15 and lines 53-67; col. 4, lines 42-53; and col. 5, lines 31-39).

Response to Amendment

9. Applicant's arguments filed 20 OCT 2006 have been fully considered but they are not persuasive.

Although Applicant does not specifically point out how the amended claims distinguish over the applied prior art, the claims appear to recite further aspects of the materials being employed in the claimed apparatus. As explained in the previous office action, the elected claims are strictly apparatus claims and with regard to the recitations of powder coatings and materials such as base material and particulate additives that Applicant apparently relies upon for patentability in the remarks, a recitation with respect to the material intended to be worked upon by a claimed apparatus (the powder coatings, base material, and particulate additives in this instance) does not impose any structural limitations upon the claimed apparatus, which differentiates it from a prior art apparatus satisfying the structural limitations of that claimed. See *Ex parte Masham*, 2 USPQ2d 1647, 1648 (Bd. App. 1987). Also see *In re Rishoi*, 197 F.2d 342, 344, 94 USPQ 71, 72 (CCPA 1952). “Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim.” *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969). Furthermore,

Art Unit: 1723

"[i]nclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims." *In re Young*, 75 F.2d 966, 25 USPQ 69 (CCPA 1935) (as restated in *In re Otto*, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963)).

Accordingly, the recitation of what particular substances are being processed in the claimed apparatus is not germane to the patentability of the apparatus itself. Since all of the claimed structural elements are met by the prior art applied above under 35 U.S.C 103, the rejections are considered proper.

The structures now recited in amended claim 1 are sources of the materials (construed as equivalent to vessels, tanks, receptacles, etc. capable of holding such materials, irrespective of the particular type of materials) that are clearly shown in the prior art as explained in the rejections. Since the type of materials are not germane to patentability of the claimed apparatus as noted above and the prior art shows the claimed structure of the sources, it is not seen how amended claim 1 defines over the applied prior art.

With regard to the "means" added in the last section of claim 1, the examiner has found that the prior art elements set forth in the rejections each perform the function specified in the "means" clause of amended claim 1 (namely capable of maintaining pressure in the pressure vessel at a desired value), the prior art elements are not deemed to be excluded by any explicit definition provided in the specification for an equivalent, and the prior art elements are equivalents of the means plus function limitation. The prior art elements are considered an equivalent since:

- (A) the prior art elements (namely element 110 in Johnson et al.; element 47, 57, and/or 61 in Chang et al. (US 5,318,431); and element 70 in Rizvi et al.) perform the identical function specified in the claim (i.e., maintaining pressure in the pressure vessel at a desired value) in substantially the same way, and produces substantially the same results as the corresponding element disclosed in the instant specification, or
- (B) a person of ordinary skill in the art would have recognized the interchangeability of the elements shown in the prior art for the corresponding element disclosed in the specification, or
- (C) there are insubstantial differences between the prior art elements and the corresponding element disclosed in the specification, or
- (D) the prior art elements are structural equivalents of the corresponding element disclosed in the specification. That is, the prior art elements (namely element 110 in Johnson et al.; element 47, 57, and/or 61 in Chang et al. (US 5,318,431); and element 70 in Rizvi et al.) perform the function specified in the claim in substantially the same manner as the function is performed by the corresponding element described in the specification, specifically the element 46 disclosed in the instant specification.

Accordingly, since the prior art elements are considered equivalents, the claim limitation which invokes 35 U.S.C. 112, sixth paragraph in claim 1 is met by the prior art elements: element 110 in Johnson et al.; element 47, 57, and/or 61 in Chang et al. (US 5,318,431); and element 70 in Rizvi et al.

Applicant appears to suggest that the applied prior art fails to disclose the structure recited in independent claim 1, however, Applicant has not specified in the remarks what particular structure is included or excluded from the "means" clause and accordingly what structure is lacking from the prior art. The burden now shifts to the Applicant to show that the prior art elements are not an equivalent of the structure, material, or acts disclosed in the application. *In re Mulder*, 716 F.2d 1542, 1549, 219 USPQ 189, 196 (Fed. Cir. 1983).

Regarding the pressure recited in the claims, the only structure recited in claim 1 is a low pressure vessel (whatever the metes and bounds of "low" are) and a pressure maintaining mechanism, structure that is clearly disclosed in the applied prior art as noted above. The vessels of the prior art are considered quite capable of operating at said low pressure and the pressure maintaining mechanisms are considered to be inherently or explicitly capable of maintaining the pressure at any desired pressure, including the range recited in claim 1. The examiner does not foresee allowance of the apparatus claims simply as a function of the recited pressure in view of the combined teachings of the prior art.

Any arguments regarding the intended use of the extruder will not be afforded any patentable weight because it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647; *In re Sebald*, 122 USPQ 527; *In re*

Lemin et al., 140 USPQ 273; *In re Sinex*, 135 USPQ 302; *In re Pearson*, 181 USPQ 641.

In response to Applicant's previous argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). Since all of the applied prior art is drawn to screw extruding devices and additive injecting systems for said extruding devices, Applicant's assertion that the references constitute non-analogous art remains unpersuasive.

It is the examiner's earnest opinion that the disclosed subject matter is perhaps better suited to claiming in the method format wherein the particular materials being processed in the method must be afforded patentable weight (see MPEP 2116). However, since all of the claimed structure is readily apparent from the prior art, the examiner does not envision allowance of apparatus claims of the scope currently presented, unless of course Applicant prevails upon appeal. Note also that an RCE does not allow for switching inventions (such as apparatus to method - divisional equivalent) - see the comparison chart in MPEP 706.07(h).

Conclusion

10. All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b).
Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles E. Cooley whose telephone number is (571) 272-1139. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker can be reached on (571) 272-1151. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1723

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Charles E. Cooley
Primary Examiner
Art Unit 1723

9 March 2007